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### Jonathan P Thomas on Cohort effects

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## Focus paper

### School of Economics

[www.econ.ed.ac.uk](http://www.econ.ed.ac.uk)

## *Cohort effects within firms, and their implications for labour market outcomes and the business cycle.*

*"Two-tier wage  
systems are terrible.*

*We had one at [two large  
corporations]. What it produced  
was a very demoralized  
workforce. The company hired  
new people for less. Productivity  
went down. There were fist  
fights in the shop. The lower-  
paid people were mad."*

**Union representative, quoted  
in Truman Bewley, Why wages  
don't fall during a recession.**

*"The need for equity is  
perhaps the most important  
factor in determining pay  
rates... Pay rates must... be  
equitable internally in that each  
employee should view his or her  
pay as equitable given other  
employees' pay rates in the  
same organization."*

**Gary Dessler, Personnel  
Management**



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**T**hese quotes illustrate a feature of many organisations, that equally qualified and able workers should get paid similar amounts. In the ESRC funded project "Cohort effects within firms, and their implications for labour market outcomes and the business cycle", Ric Holt, Andy Snell, Jonathan Thomas (all

of the University of Edinburgh), and Pedro Martins (Queen Mary, University of London) investigate some theoretical and empirical implications of such pay systems. In particular they are studying how such "equal treatment" affects behaviour over the business cycle.

## Project objectives

The project aims to achieve two objectives. First, we are analysing the labour market implications of the assumption that firms cannot pay similarly qualified employees differently according to when they joined the firm. For example, if the general situation for workers improves, a firm that seeks to hire new workers may feel it has to pay more to new hires. However, if the firm must pay the same wage to new hires and incumbents due to equal treatment, it would either have to raise the wage of the incumbents, or offer new workers a lower wage than the firm would do otherwise. This is very different from the standard assumption in economic analysis that firms are free to treat newly hired workers independently of existing hires.

Second, we will use detailed data on individual wages to try to gauge whether (and to what extent) equity is a feature of actual labour markets. To investigate this, we are using two matched employer-employee panel datasets, one from Portugal and the other from Brazil. These unique datasets provide objective records on millions of workers and their firms over a long period of time, so that we can identify which firms employ which workers at each time. The datasets also include a large number of firm and worker variables.

## Initial findings

Preliminary theoretical research\* suggests that wages will be less variable and employment considerably more variable if labour markets behave like markets for other commodities. The reasoning is as follows. When a firm is hiring new workers, conventional supply and demand analysis suggests that if the labour market is tight, say, with low supply of workers or high demand, the price (wage) will rise to bring supply and demand into balance.



If, however, the firm cannot pay newly hired workers at different rates from existing workers, the analysis is very different. In these circumstances, the firm wants to pay a high rate to new workers because the market is tight and it will also have to pay existing workers at this high rate. This could be very costly if the existing workers would have been content to work at lower rates without new hires. This also means that the firm has an incentive not to raise wages as far as it would do in the normal supply-demand analysis, so wages do not respond fully to normal market signals.

The same happens when the labour market is slack in downturns: the firm could potentially hire at lower wages but these new hires would not be content to work alongside better paid but otherwise similar employees. The firm could cut the wage of incumbents to match that of the new hires, but there are reasons why this is difficult. One possibility we will investigate is that incumbents do not want a wage which fluctuates greatly in line with market conditions, but instead would prefer more stability. We find that the firm prefers to maintain the wage close to its previous level and bring in new hires at this higher rate, even though it is paying more than necessary to attract the new workers.

## Project aims

The project aims to build formal theoretical models of how wages and employment evolve when firms cannot pay discriminate (or can only discriminate to a limited extent). It is indisputable that pay relativities within organisations matter. There is much anecdotal evidence that, in many occupations, a worker might be especially put out to find out that a similarly qualified colleague is being paid at a higher rate. Understanding this phenomenon may well be more a matter of psychology than of economic theory. The project, however, will investigate to what extent the phenomenon can be detected in our detailed datasets, and aims to show that it can help explain certain features of labour markets.

## References:

Gary Dessler, *Personnel Management*, Reston Pub. Co., 1984, p.224.  
Union representative, quoted in *Truman Bewley, Why wages don't fall during a recession*, Harvard University Press, 1999, p.146.

\*Jonathan P. Thomas and Andy Snell "Labour Contracts, Equal Treatment and Wage-Unemployment Dynamics", available for download at American Economic Journal: Macroeconomics: Vol. 2 No. 3 (July 2010)  
<http://www.aeaweb.org/articles.php?doi=10.1257/mac.2.3.98>